

Ecosystems and the food cycle



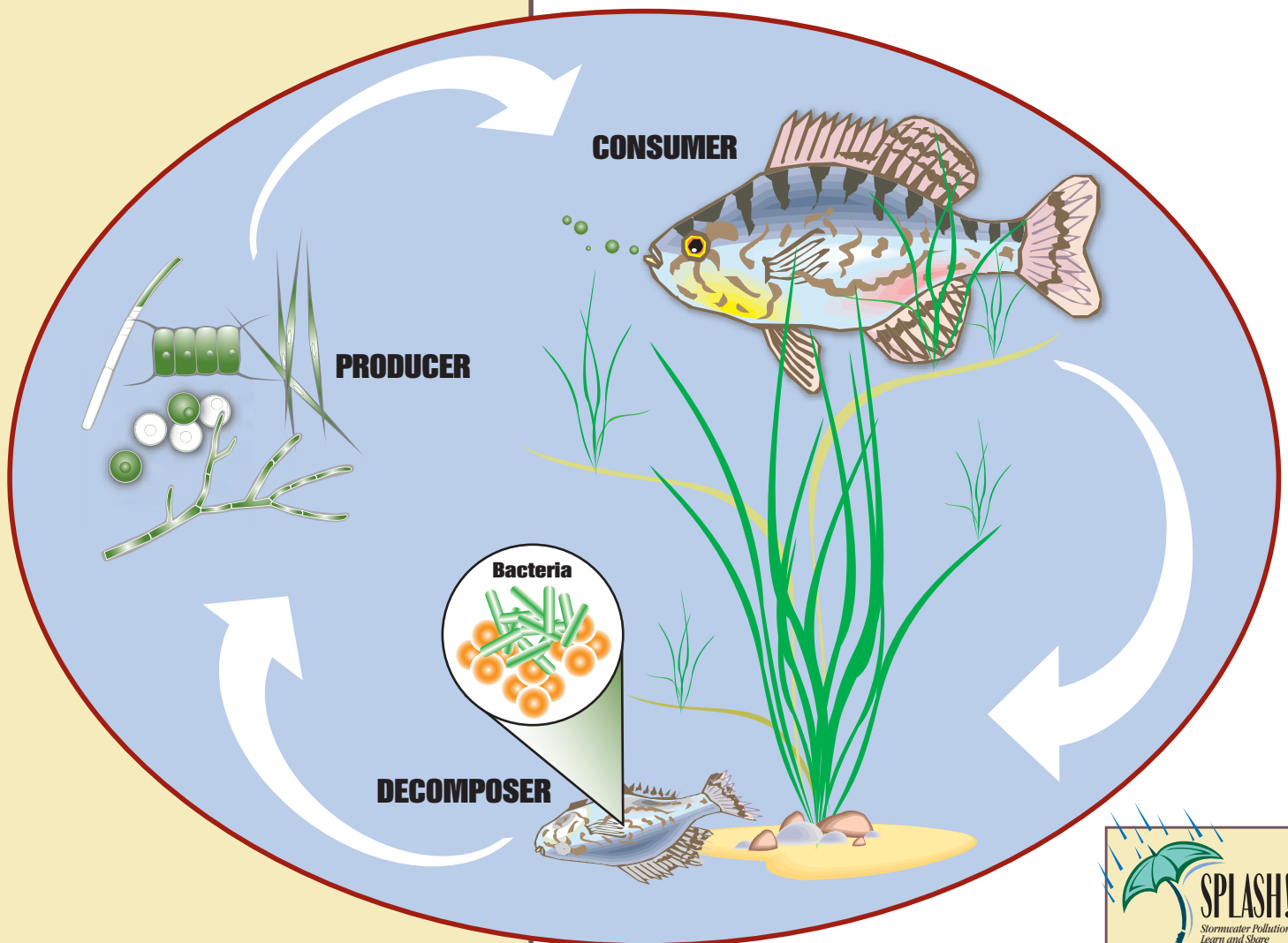
An ecosystem is an ecological community and its environment interacting and functioning together as a unit.

Ecosystems contain three categories of life: producers, consumers, and decomposers. These three categories of life represent the basic food cycle.

In a healthy ecosystem, all of these organisms interact, keeping a balance that helps the ecosystem continue to function. If one part of the ecosystem becomes altered or destroyed, that balance is damaged and the entire ecosystem becomes threatened.

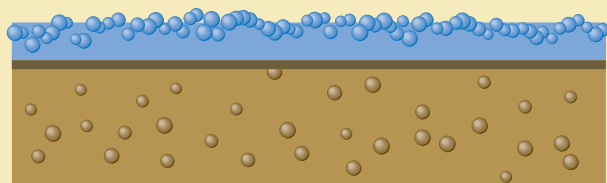
A pond can be used to illustrate an ecosystem. The water in the pond contains algae and plants (producers). Fish and animals (consumers) eat the algae and plants. When a fish dies, it falls to the bottom of the pond and bacteria (decomposer) breaks it down into organic material that feeds the algae and plants.

So, what would happen if the pond's ecosystem became out of balance? How could stormwater pollution harm the pond's ecosystem?



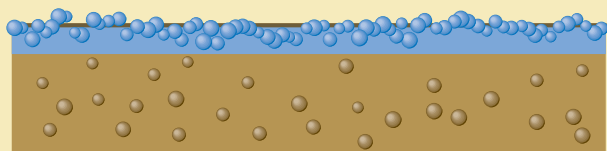
It's Water that makes Wetlands!

Some wetlands are wet all year long; others are wet in the spring, but drier in the summer. The water may be:



Water Level
Ground Surface
Soil

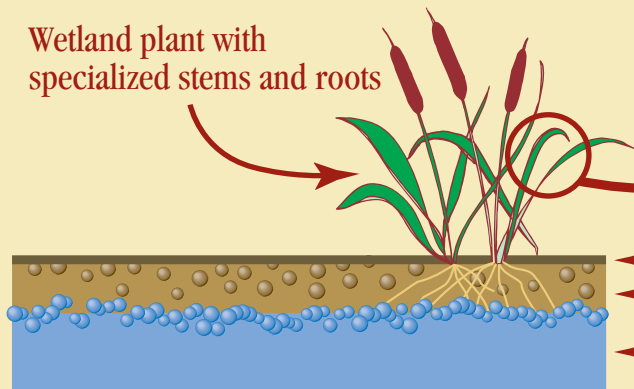
Above the ground's surface



Water Level and
Ground Surface
Soil

At the surface
(saturated like a sponge)

Wetland plant with
specialized stems and roots

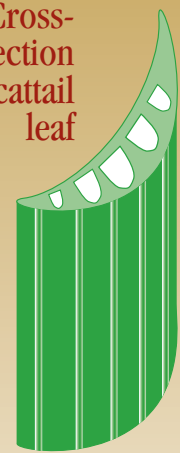


Ground Surface
Soil
Water Level

Just below the surface
(where plant roots can reach)

Water defines wetlands. All wetlands have water above or just below the ground's surface. Wetlands may be just damp, or intermittently flooded during the rainy season. It is the presence of water that leads to the development of hydric soils. **Hydric soils** contain clay and are saturated for a long enough time to create an anaerobic (low-oxygen) state in the soil. The plants that grow in hydric soils are called **hydrophytic plants**. Hydrophytic plants have adapted to living in hydric soils by developing special stems, roots and trunks.

Cross-section
of cattail
leaf



The leaf of the cattail has large air spaces inside that transport oxygen to the roots. The air spaces work in two ways: they are part of a rigid structure that allows the leaves to stand upright in water, but the airspaces also make the leaves light enough to float.



The Kalapuyas:

Living on the Fertile Prairie

The west Eugene wetlands are located in the flat plain of the Willamette Valley floor. In the mid-1800s, they were a mixture of wet prairie (with clay soils) and savanna (prairie with scattered trees.) Grasses and sedges covered the prairie with tufted hairgrass, *Deschampsia cespitosa*, as the dominant species. In the spring, blooming camas lily colored the prairie with shades of violet and blue. These habitat conditions allowed a variety of plant and wildlife to flourish, making the prairies a versatile hunting and gathering ground for the native Kalapuya Indians.



As the first “wetland managers”, the Kalapuyas burned the wetlands seasonally to keep trees and shrubs from advancing into the prairie grasslands. Keeping the prairies open made food gathering, hunting and traveling easier.



One important food source for the Kalapuya was the camas bulb. Highly prized as a food source, the bulb of the camas lily, *Camassia quamash*, was gathered and roasted in special pit ovens. Northwest tribes claimed gathering rights to certain camas meadows. After the lilies bloomed in the late spring, the bulbs were harvested and stored for the winter.

